

# Emergency Departments Intubation COVID-19 Pandemic Guideline - April 13, 2020 0819

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Introductions: Please review the material and use appropriate isolation precautions. Plan ahead, as it takes time to apply all the barrier precautions.

## Overview

**Clothing:** Wear gown, gloves, PAPR/CAPR, or fit-tested N95 respirator + face protector such as a shield and goggles. **A PAPR is preferred for intubation.** Consider the use of additional protection, such as an intubation box or other barrier device if available ([e.g. premade durable plastic drape to cover the patient](#)).

**Staffing:** Limit the number of healthcare providers to only essential personnel in the room where the patient is to be intubated.

**Considerations:** Consider using a video laryngoscope.

**Plan for rapid sequence induction (RSI):** RSI may need to be modified, if patient has very high alveolar-arterial gradient and is unable to tolerate 30 seconds of apnea or has a contraindication to succinylcholine. If manual ventilation is anticipated, small tidal volumes should be applied.

**Oxygenation:** 5 minutes of preoxygenation with oxygen 100% and RSI to avoid manual ventilation of patient's lungs and potential aerosolization of virus from airways.<sup>35</sup> [Click to view additional details on preoxygenation methods.](#)

**Check filter:** Ensure viral filter placed between facemask and resuscitation bag. After intubation, respiratory will move it to the appropriate position on the respiratory circuit (downstream of the exhaled arm of the ventilator circuit).

**Intubate:** Intubate and confirm correct position of tracheal tube.

## Induction Strategies

**The goal of induction for COVID-19 patients is to quickly and completely induce apnea and eliminate the cough reflex to minimize the risk of aerosolization.**

### Sedation

- **Ketamine is the preferred sedative agent 1mg/kg for intubation. If the patient is not compliant with pre-oxygenation, consider [Delayed Sequence Intubation \(DSI\)](#).**<sup>38</sup>
- Can use etomidate in normal 0.2-0.3mg/kg induction dosing but weigh the risk of adrenal suppression.<sup>40</sup>
- Propofol – 1-1.5mg/kg, other than increased risk in hemodynamic instability, no specific COVID recommendations.<sup>40</sup>

### Paralytics

- Use **higher doses** in COVID patients to ensure apnea and blunting of cough reflex (Rocuronium – 1.5 mg/kg, Succinylcholine – 2 mg/kg).
- Give the meds **1 full minute** to work, otherwise you risk increasing aerosolization. This is why a good pre-oxygenation plan is important, since you will ideally be waiting 1 minute with no BVM.<sup>41</sup>

## Mechanical Ventilation and General Post-Intubation Care

1. COVID patients seem to have 2 phenotypes, L or H.
2. **L Phenotype** – Not a classical ARDS patient – Compliant lungs and less abnormal chest imaging
  - a. **Tidal Volume:** Start with 8 cc/kg IBW and titrate to achieve a Pplat <30 mmHg. (Driving pressure <15). If plateau pressures are high, reduce tidal volumes and make sure patient is heavily sedated to avoid dyssynchrony.
  - b. **FiO2:** Titrate to achieve SpO2 >90% Start high, 80-100%
  - c. **PEEP:** After setting tidal volume and higher FiO2 start Peep at 5 and titrate up to effect.
3. **H Phenotype** – Treat like classical ARDS – low compliance lungs, very abnormal chest imaging
  - a. **Tidal Volume:** 6-8 cc/kg IBW
  - b. **FiO2 and PEEP:** Titrate up utilizing ARDS protocol, higher PEEP and lower FiO2

**Best Bet:** Start at 8 cc/kg IBW; FiO2 100%; RR 16-18; PEEP or 5 and titrate up to affect. Goal SpO2 of 92-95%

**Alternate Strategy (consider only under direction & supervision of the intensivist):** Consider airway pressure release ventilation (APRV) as the initial vent mode because it fits well with suspected COVID-19 pathophysiology. This mode helps maintain high mean airway pressures and facilitates secretion clearance. Recommended starting settings: P-High around 25cm, P-Low at zero, T-Low at 0.5 seconds initially, FiO2 100% and titrate down, turn on Automatic Tube Compensation.<sup>43</sup>